

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Status of Claims:

No claims are currently being canceled.

Claim 5 is currently being amended to correct an obvious error in that claim.

Claim 15 is currently being added.

This amendment adds and amends claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claims remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-15 are now pending in this application.

Request for Approval of Formal Drawings Previously Submitted:

Applicants requests an indication of approval of the formal drawings filed with the application on February 9, 2001.

Objection to Abstract:

In the Office Action, the Abstract was objected to because it was too long. A new Abstract is being submitted concurrently herewith, which is within the 150-word limit as set forth in the M.P.E.P. Also, a marked up copy showing the changes made is also being submitted concurrently herewith

Claim Rejections:

In the Office Action, claims 1-14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,094,449 to Komatsu in view of U.S. Patent No. 5,219,391 to Nakano. This rejection is traversed for at least the reasons given below.

The Office Action asserts that Nakano discloses a frequency offset estimating section; however, this assertion is incorrect. Nakano's frequency

offset estimating section 203 estimates a time constant in order to decrease interference in a wireless communications apparatus. See column 6, lines 1-4 of Nakano. More particularly, as described in column 6, lines 21-24 and 37-40, Nakano's frequency offset estimating section 203 estimates the amount of carrier frequency offset which can be employed by the pilot signals, and determines the width (or time constant) of a passing area of a filtering section, and also predicts the carrier frequency offset by counting the number of Zero-Crossing per section time with respect to the time change of the pilot signals.

In this regard, Nakano merely determines a frequency offset of a pilot signal, and does not estimate frequency offsets of one of correlation values and power values and demodulation timing data. Further, Nakano's frequency offset estimating section 203 does not calculate phase change quantities from the estimated frequency offsets which are provided (in the present invention) to a search section. Please note that the data despreading section 204 of Nakano does not provide an input to the frequency offset estimating section 203, and thus Nakano's frequency estimating process is much different from that recited in the presently pending claims.

Since Komatsu does not rectify the above-mentioned shortcomings of Nakano, the presently pending claims are patentable over the cited art of record.

New Claim:

New claim 15 has been added to recite additional features of the frequency offset estimation that are not disclosed or suggested by the cited art of record, when taken as a whole.

Conclusion:

Applicant believes that the present application is now in condition for allowance, and an early indication of allowance is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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Abstract of the Disclosure

A synchronization establishing apparatus in a spectrum spread communication system, includes a search section, ~~a frequency offset estimating section and a demodulation path selecting section.~~ The search section that calculates correlation values from a received spectrum spread signal, and calculates power values ~~as addition values of symbols corresponding to the correlation values~~ and power addition values of the power values. Also, the search section selects larger ones of the power addition values to output together with timing data corresponding to the selected larger power addition values. ~~At this time, one~~ One of the symbols and the power values ~~being~~ is corrected in phase based on phase change quantities. ~~The~~ A frequency offset estimating section estimates frequency offsets from one of the correlation values and the power values and demodulation timing data and calculates the phase change quantities from the estimated frequency offsets ~~to output to the search section.~~ The A demodulation path selecting section selects path timings ~~from the timing data~~ based on the selected larger power addition values and outputs the demodulation timing data ~~indicative of the path timings~~ to the frequency offset estimating section.